I-983

This is one map in a set of topographic map sheets covering areas of special interest on Mars at nominal scales of 1:1,000,000 and 1:250,000 (Batson, 1973). The major source of map data was the Mariner 9 television experiment (Masursky and others, 1970). ADOPTED FIGURE

The figure of Mars used for the computation of the map projection is an oblate spheroid (flattening of 1/192) with an equatorial radius of 3393.4 km and a polar radius of 3375.7 km. PROJECTION

The transverse Mercator projection is used for this sheet, with a scale of 1:1,000,000 at 34° longitude. Longitudes increase to the west in accordance with usage of the International Astronomical Union (IAU, 1971). Latitudes are areographic (de Vaucouleurs and others, 1973). CONTROL

Planimetric control is provided by photogrammetric triangulation using Mariner 9 pictures (Davies, 1973; Davies and Arthur, 1973) and the radio-tracked position of the spacecraft. The first meridian passes through the crater Airy-O (lat 5.19° S) within the crater Airy. No simple statement is possible for the precision, but local consistency is 2 km.

MAPPING TECHNIQUE A series of mosaics of Mercator projections of Mariner 9 pictures was assembled

Shaded relief was copied from the mosaics and portrayed with uniform illumination with the sun to the west. Many Mariner 9 pictures besides those in the base mosaic were examined to improve the portrayal (Levinthal and others, 1973). The shading is not generalized and may be interpreted with photographic reliability

Shaded relief analysis and representation were made by Patricia M. Bridges. ALBEDO MARKINGS

The markings superimposed on the shaded relief were hand copied from pictures that were computer enhanced especially to show low frequency tone variation (Batson and Inge, 1976). The surface in these pictures is illuminated from a variety of angles from the camera line of sight. The markings therefore delineate boundaries of local brightness variations only and should not be considered as a true measure of albedo. No attempt was made to use Earth based telescopic albedo data.

Airbrush portrayal of albedo markings was done by Patricia M. Bridges. CONTOURS

Since Mars has no seas and hence no sea level, the datum (the 0 km contour line) for altitudes is defined by a gravity field described by spherical harmonics of fourth order and fourth degree (Jordan and Lorell, 1973) combined with a 6.1 millibar atmospheric pressure surface derived from radio-occultation data (Kliore and others, 1973; Christensen 1975). This datum is a triaxial ellipsoid with semimajor axes of A=3394.6 km, B=3393.3 km, and a semi-minor axis of C=3376.3 km. The semi-major axis A intersects the Martian surface at long 105°.

The contour lines (Wu, 1975) were compiled from Earth-based radar determinations (Downs and others, 1971; Pettengill and others, 1971) and measurements made by Mariner 9 instrumentation, including the ultraviolet spectrometer (Hord and others, 1974), infrared interferometer spectrometer (Conrath and others, 1973), and stereoscopic Mariner 9 television pictures (Wu and others, 1973). Formal analysis of contour-line accuracy has not been made. The estimated vertical accuracy of each source of data indicates a probable error of 1-2 km. COLOR

No attempt was made on the map to precisely duplicate the color of the Martian surface, although the color used does approximate it. NOMENCLATURE

Names on this sheet have been approved by the International Astronomical Union (1974; Millman, written commun., 1975). Named craters bearing double letters in parentheses are designated by the same letters on the 1:5,000,000 Oxia Palus sheet which covers this area. The prefix OXI-(identifying the Oxia Palus sheet) is part of the complete designation but, for brevity, is not shown on

M 1M 20/34 RMC: Abbreviation for Mars, 1:1,000,000 series; center of sheet, 20° N latitude, 34° longitude; shaded relief map, R, with albedo markings, M, and contours, C. REFERENCES

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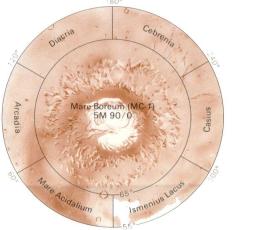
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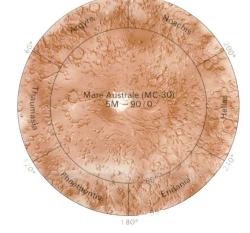
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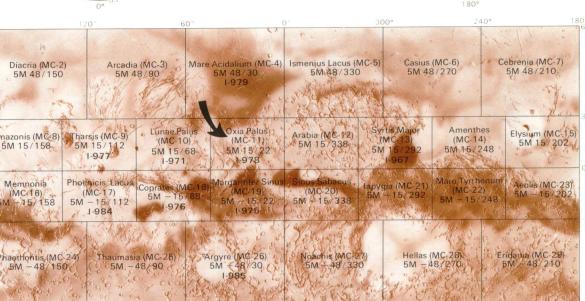
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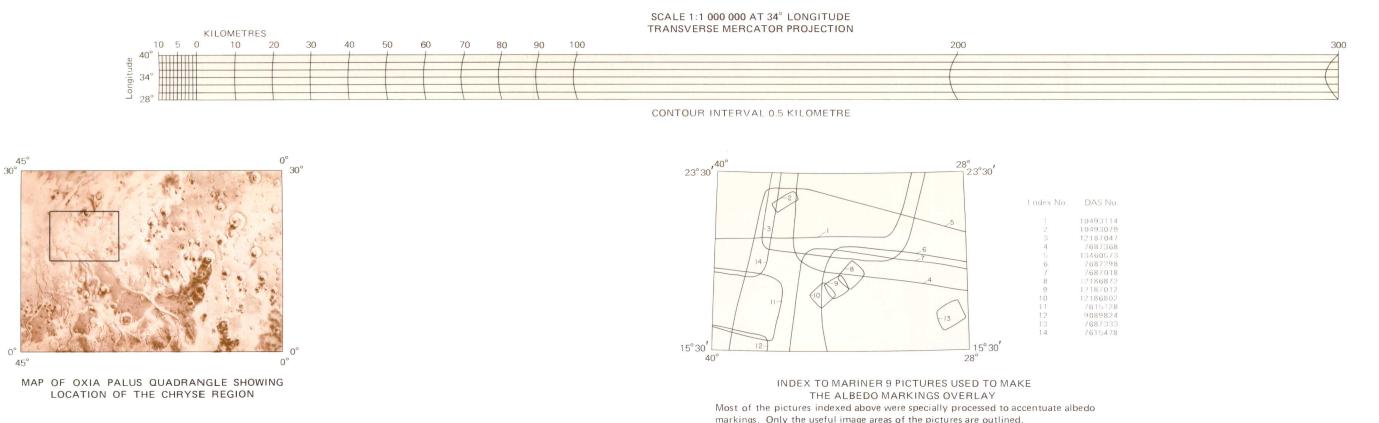
23°30′ Wahoo Wabash 34° Interior-Geological Survey, Reston, VA.-1976-G76137 South Prepared on behalf of the Viking Project Office, National Aeronautics and Space Administration under contract L-55232

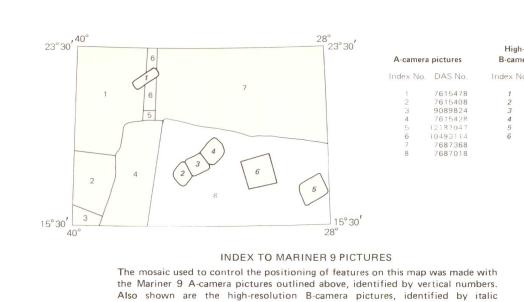






QUADRANGLE LOCATION





1976